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July 28, 2003 Date	 Gina N. Shishima

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
Yu

Serial No.: 09/841,720

Filed: April 24, 2001

For: MU OPIOID RECEPTOR METHODS

Group Art Unit: 1647

Examiner: Landsman, Robert S.

Atty. Dkt. No.: INDA:002USD1

**I. AMENDMENT AND II. RESPONSE TO RESTRICTION REQUIREMENT**  
**DATED MAY 27, 2003**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Commissioner:

This paper is submitted in response to the Restriction Requirement dated May 27, 2003 for which the date for response was June 27, 2003.

A request for a one-month extension of time to respond is included herewith along with the required fee. This extension will bring the due date to July 27, 2003, which is within the six-month statutory period. Should such request or fee be deficient or absent, consider this paragraph such a request and authorization to withdraw the appropriate fee under 37 C.F.R. §§ 1.16 to 1.21 from Fulbright & Jaworski L.L.P. Account No.: 50-1212/INDA:002USD1.

**I. AMENDMENT**

Please cancel claims <sup>26</sup>24 and <sup>37</sup>32 without prejudice or disclaimer.

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Please amend the claims as follows:

- 19 ~~18~~. (Amended once) A process for screening a candidate substance for its ability to bind to an opioid receptor comprising:
- (a) providing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising 25 contiguous nucleotides of SEQ ID NO:1;
  - (b) contacting the substance with the recombinant opioid receptor polypeptide; and
  - (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.

20 ~~19~~. (Amended once) The process of claim <sup>19</sup>~~18~~, wherein the nucleic acid sequence comprises 40 contiguous nucleotides of SEQ ID NO:1.

21 ~~20~~. (Amended once) The process of claim <sup>20</sup>~~19~~, wherein the nucleic acid sequence comprises 55 contiguous nucleotides of SEQ ID NO:1.

22 ~~21~~. (Amended once) The process of claim <sup>21</sup>~~20~~, wherein the nucleic acid sequence comprises 70 contiguous nucleotides of SEQ ID NO:1.

23 ~~22~~. (Amended once) The process of claim <sup>22</sup>~~21~~, wherein the nucleic acid sequence comprises SEQ ID NO:1.

24 ~~23~~. (Amended once) A process for screening a candidate substance for its ability to bind to an opioid receptor comprising:

- (a) expressing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising 25 contiguous nucleotides of SEQ ID NO:1;
- (b) contacting the candidate substance with the recombinant opioid receptor polypeptide; and
- (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.

28. (Amended once) The process of claim <sup>28</sup>27, wherein the nucleic acid sequence comprises 40 contiguous nucleotides of SEQ ID NO:1.

29. (Amended once) The process of claim <sup>29</sup>27, wherein the nucleic acid sequence comprises 55 contiguous nucleotides of SEQ ID NO:1.

30. (Amended once) The process of claim <sup>30</sup>27, wherein the nucleic acid sequence comprises 70 contiguous nucleotides of SEQ ID NO:1.

31. (Amended once) A process for screening for an antagonist or agonist of an opioid receptor comprising:
- (a) providing a recombinant opioid receptor polypeptide comprising the amino acid residue sequence of SEQ ID NO:2;
  - (b) contacting the substance with the recombinant opioid receptor polypeptide; and
  - (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.

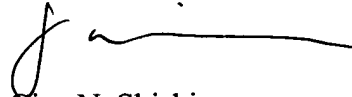
## II. RESPONSE

On April 24, 2001, Applicant filed a Preliminary Amendment, in which claims 1-17 were cancelled and claims 18-36 were added (Applicant inadvertently stated that claims 18-37 were added). Claims 24 and 32 are cancelled herein. Therefore, claims 18-23, 25-31, and 33-36 are pending in this application.

In response to the restriction requirement which the Examiner imposed, Applicant elects, without traverse, to prosecute claims 18-37, *i.e.*, the Group I claims.

The Examiner is invited to contact the undersigned attorney at (512) 536-3081 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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Date: July 28, 2003

**APPENDIX A**  
**CLAIM AMENDMENTS**

18. (Amended once) A process for screening a candidate substance for its ability to bind to an opioid receptor comprising:
  - (a) providing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising 25 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3];
  - (b) contacting the substance with the recombinant opioid receptor polypeptide; and
  - (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.
19. (Amended once) The process of claim 18, wherein the nucleic acid sequence comprises 40 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3].
20. (Amended once) The process of claim 19, wherein the nucleic acid sequence comprises 55 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3].
21. (Amended once) The process of claim 20, wherein the nucleic acid sequence comprises 70 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3].
22. (Amended once) The process of claim 21, wherein the nucleic acid sequence comprises SEQ ID NO:1 [or SEQ ID NO:3].
27. (Amended once) A process for screening a candidate substance for its ability to bind to an opioid receptor comprising:
  - (a) expressing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising 25 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3];
  - (b) contacting the candidate substance with the recombinant opioid receptor polypeptide; and

- (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.
- 28. (Amended once) The process of claim 27, wherein the nucleic acid sequence comprises 40 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3].
- 29. (Amended once) The process of claim 27, wherein the nucleic acid sequence comprises 55 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3].
- 30. (Amended once) The process of claim 27, wherein the nucleic acid sequence comprises 70 contiguous nucleotides of SEQ ID NO:1 [or SEQ ID NO:3].
- 34. (Amended once) A process for screening for an antagonist or agonist of an opioid receptor comprising:
  - (a) providing a recombinant opioid receptor polypeptide comprising the amino acid residue sequence of SEQ ID NO:2 [or SEQ ID NO:4];
  - (b) contacting the substance with the recombinant opioid receptor polypeptide; and
  - (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.

## **APPENDIX B PENDING CLAIMS**

18. A process for screening a candidate substance for its ability to bind to an opioid receptor comprising:
  - (a) providing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising 25 contiguous nucleotides of SEQ ID NO:1;
  - (b) contacting the substance with the recombinant opioid receptor polypeptide; and
  - (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.
19. The process of claim 18, wherein the nucleic acid sequence comprises 40 contiguous nucleotides of SEQ ID NO:1.
20. The process of claim 19, wherein the nucleic acid sequence comprises 55 contiguous nucleotides of SEQ ID NO:1.
21. The process of claim 20, wherein the nucleic acid sequence comprises 70 contiguous nucleotides of SEQ ID NO:1.
22. The process of claim 21, wherein the nucleic acid sequence comprises SEQ ID NO:1.
23. The process of claim 22, wherein the nucleic acid sequence comprises SEQ ID NO:1.
25. The process of claim 20, wherein detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide involves measuring (i) binding ability; (ii) the ability of the recombinant opioid receptor polypeptide to bind the candidate substance; (iii) ability of candidate to activate ion channels in a cell membrane; or (iv) modulation of ion channels in the cell membrane.
26. The process of claim 20, wherein recombinant opioid receptor polypeptide is chimeric.

27. A process for screening a candidate substance for its ability to bind to an opioid receptor comprising:
- (a) expressing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising 25 contiguous nucleotides of SEQ ID NO:1;
  - (b) contacting the candidate substance with the recombinant opioid receptor polypeptide; and
  - (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.
28. The process of claim 27, wherein the nucleic acid sequence comprises 40 contiguous nucleotides of SEQ ID NO:1.
29. The process of claim 27, wherein the nucleic acid sequence comprises 55 contiguous nucleotides of SEQ ID NO:1.
30. The process of claim 27, wherein the nucleic acid sequence comprises 70 contiguous nucleotides of SEQ ID NO:1.
31. The process of claim 27, wherein the nucleic acid sequence comprises SEQ ID NO:1.
33. The process of claim 27, wherein recombinant opioid receptor polypeptide is chimeric.
34. A process for screening for an antagonist or agonist of an opioid receptor comprising:
- (a) providing a recombinant opioid receptor polypeptide comprising the amino acid residue sequence of SEQ ID NO:2;
  - (b) contacting the substance with the recombinant opioid receptor polypeptide; and
  - (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.
35. The process of claim 34, wherein detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide involves measuring (i) binding ability; (ii)



the ability of the recombinant opioid receptor polypeptide to bind the candidate substance; (iii) ability of candidate to activate ion channels in a cell membrane; or (iv) modulation of ion channels in the cell membrane.

36. The process of claim 34, wherein the recombinant opioid receptor polypeptide is chimeric.